PCI-X 2-Port Gigabit Ethernet Card for Windows Server 2003, 64-bit, and Linux Installation Guide

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Hardware and Software Installation Procedure

This document is for software version 7.2.17.0. These instructions apply to the A9899A-60001 (1000Base-SX--fiber-based) and A9900A-60001 (1000Base-T--copper-based) PCI-X gigabit Ethernet cards on Windows Server 2003, 64-bit and Linux. The Base-T cards operate at 10 or 100 Mbit/s in either full- or half-duplex modes and at 1000 Mbit/s only in full-duplex mode. The 1000Base-SX cards operate only at 1000 Mbit/s and in full-duplex mode. Ensure that you set both your switch and gigabit Ethernet card to auto negotiation or set both to the same speed and duplex mode. Wake-on-LAN is supported only on port A (see Figure 1) of each core AB352A Base-T card and only when used on certain Itanium-based systems. The LAN card driver is on the HP Smart Setup Build 2.0 (or later) application CD. It is also downloadable at http://www.hp.com/support/itaniumservers. Note: you will not need to perform the following hardware and software installation steps if your Gigabit Ethernet card was factory installed (ordered on product option 0D1) or its LAN port is the "built-in" or "core" LAN.)

Installing HP Server 1000Base-TX/SX PCI-X LAN Adapters (P/N A9899A/A9900A)

Step 1: Access the system card bay

NOTE: To obtain updates to driver e1000645.sys (version 7.2.17 or later), please check HP Driver Support on http://www.hp.com/support/itaniumservers

Shut down the HP Server, unplug the power cord and remove the cover(s). Refer to system documentation for instructions on server shut down procedures and cover removal.

> Turn off and unplug the power to the HP Server before removing its cover. Failure to do so could inflict a dangerous shock to you and may damage the adapter or HP Server.

- Wait for the system to shut down completely, and then power off the system by pressing the system off button. Ensure that the system is grounded.

- Open the system to gain access to the PCI backplane.

- Select an empty PCI or PCI-X slot and remove the slot cover. The card can operate in PCI as well as PCI-X mode.

Step 2: Install the card

- Observe the antistatic precautions. HP recommends wearing ESD straps when installing the card.

- Record the serial number and MAC address located on the card for future reference.

- Grasp the card by its edges or faceplate with both hands, insert the card into the slot, and firmly but gently press the card in until it is fully seated.

- Secure the card and reassemble the system.

Step 3: Connect the card to the network

- Attach the network cable (or cables) to the card. Attach the connector from a LAN cable to the card (Figure 1). For 1000Base-SX, the cabling can be either 62.5 micron or 50 micron multimode fiber optic (MMF) cable with LC connectors. If the remote connection is type SC, you will need an LC-to-SC conversion cable. For 1000Base-T, the cabling must be Cat 5 UTP or better with RJ-45 connectors. Refer to the tables at the end of this procedure for operating distances.

- Attach the free end of the LAN cable (or cables) to any unused port(s) on the switch. Set the interfacing ports on the switch to the same settings as this LAN card: either set the card and switch port to auto negotiation, or set them to the same speed and duplex mode.

- If you are using Jumbo Ethernet frames, ensure that all end stations on a given LAN* have the same maximum transmission unit (MTU) setting. The switch ports in your LAN can have any MTU setting greater than or equal to the end station's MTU. (*Note: here "LAN" means that the end stations do not have any routers or layer 3 switches in between them.)

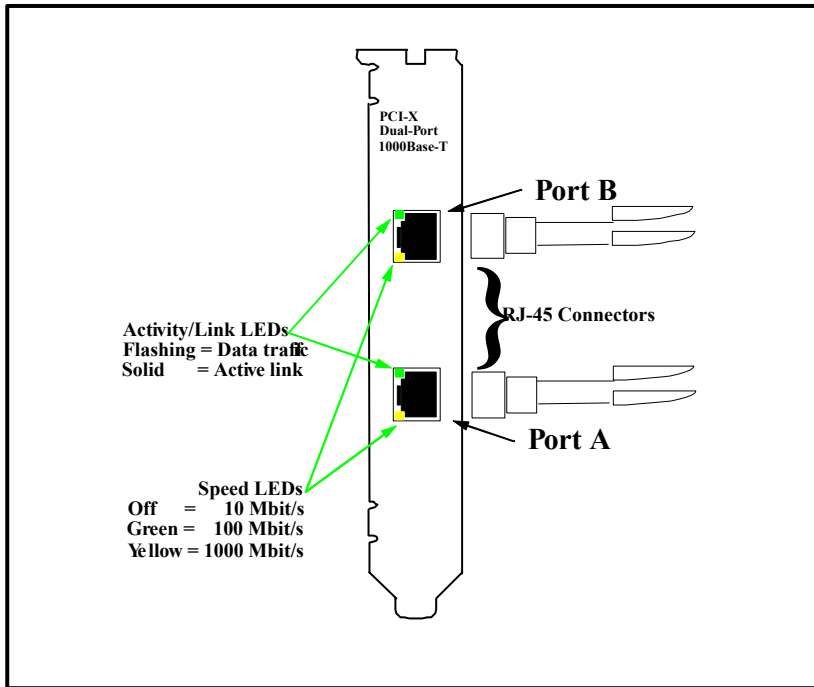- Ensure the power cable is connected to system. Power up the system.

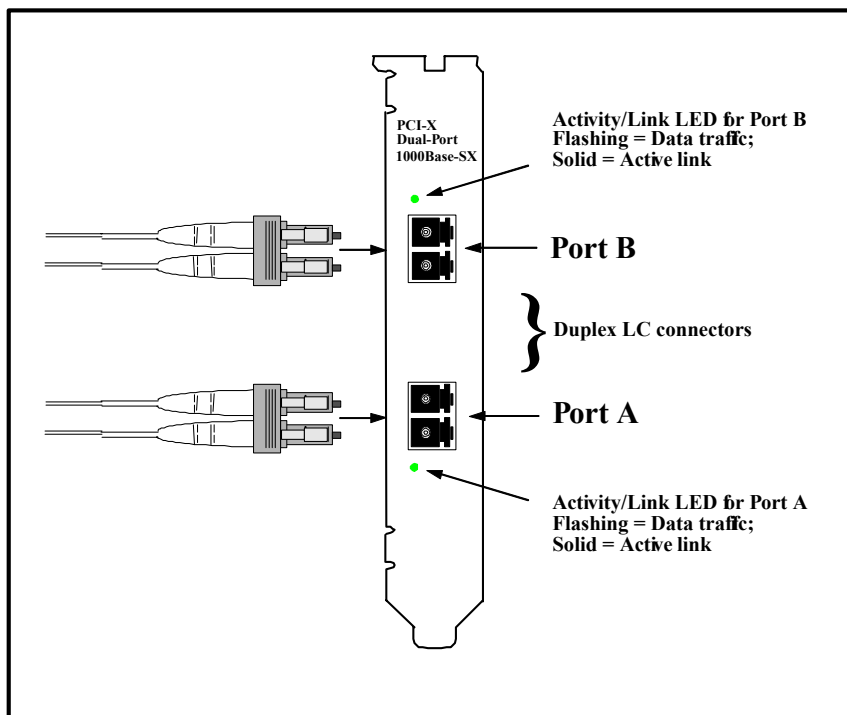Figure 1: **A9900A PCI-X Copper-based 2-Port Gigabit Ethernet Card**

Figure 2: **A9899A PCI-X Fiber-based 2-Port Gigabit Ethernet Card**

Installation with Windows Server 2003, 64-bit

Automatic Configuration

HP Itanium servers automatically detect and configure PCI-compliant adapters when restarting. The adapter IRQ level is automatically set by the EFI each time the server is restarted. If configuration problems are encountered, see the HP Support site http://support.hp.com/.

Step 1: Prepare to install the software

After installing the adapter in the server and starting Windows Server 2003, 64-bit, the installation of the correct driver is required. The correct driver may be obtained from http://www.hp.com/support/itaniumservers or the HP Smart Setup Media for Itanium® 2-based servers-Windows Version supplied with this adapter.

To download from the web, perform the following steps:

1. Go to http://www.hp.com/support/itaniumservers

2. Search for the part number A9900A (or A9899A for fiber Gigabit Ethernet).

3. Select appropriate drivers and downloads.

4. Download the driver to a location on the server or to a system with a floppy or DVD writer.

Or you can install the drivers from the HP Smart Setup media.

NOTE: When using the driver from the HP Smart Setup media, the Hardware Update Wizard finds the driver automatically.

Once the driver is available, perform the following steps:

Opening Computer Management

1. Click **Start**>**Programs**>**Administrative Tools**>**Computer** >**Management**.

2. If the **Programs** menu displays **Administrative Tools**, go to Updating Driver. If the **Programs** menu does not display Administrative **Tools**, perform the following steps.

3. Right-click on the system tray.

4. Select **Properties**.

5. Click the **Start** menu.

6. Click **Customize**...

7. Select **Display Administrative Tools**.

8. Click **Ok**.

9. Click **Ok**.

10. Click **Start>Programs>Administrative Tools>Computer >Management**.

Step 2: Install the latest software. (Driver Update)

1. In the left panel of **Computer Management**, click **Device Manager**.

2. In the right panel of **Computer Management**, double-click the device to be updated.

3. From the device properties page, click the **Driver** tab.

4. Click **Update Driver**. The Hardware Update Wizard displays.

5. Select **Install the software automatically (Recommended).**

6. Click **Next** to continue.

7. Click **Finish** to close the Hardware Update Wizard.

8. The driver has now been updated and the device properties page displays the new driver version.

Troubleshooting Network Interface Cards

Startup

During startup of the Network Operating System, the Network Interface cards load the latest available driver. After the system has started and configured the adapters, the following display may appear if the Network Properties window has the "Show icon in notification area when connected," checked:
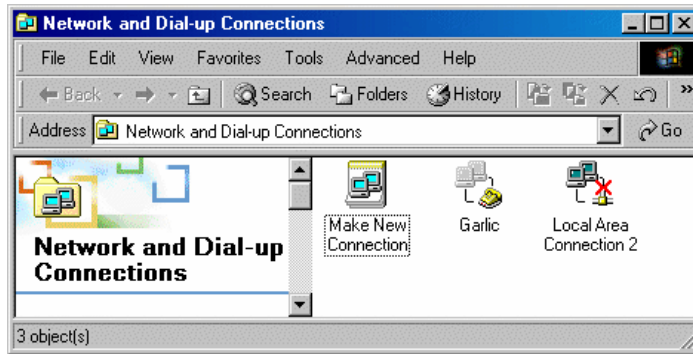

This mark indicates that it is not connected to the network. Connect the adapter to the network using an appropriate cable (Category 5 UTP or Fiber Ethernet cable). Once you have connected the adapter to a viable network, the operating system removes the red question mark. See Checking Connection below for further instructions.

Step 3: Checking Connection

In some cases, the operating system does not display network icons in the system tray. To verify network connections perform the following steps:

- Select the **Network** icon in the Cont**rol Panel**.

- If the network is not connected, the operating system will put an X over the network icon in the Network Connections dialog.

- The red X over one of the network icons indicates that it is not connected to your network. Connect the adapter to your network using an appropriate cable (Category 5 UTP or fiber optic cable). Once the adapter is connected to a viable network, the operating system removes the red question mark.
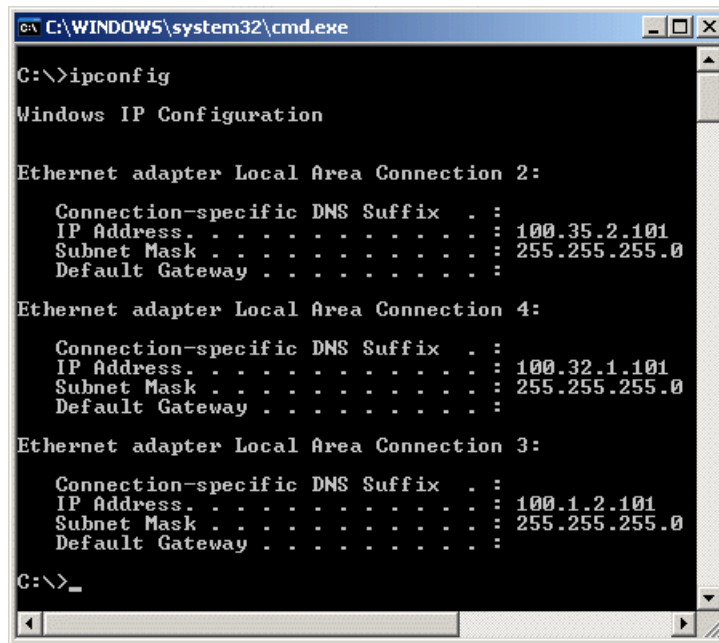
Ping a Host on the Network

Once the operating system indicates that all the adapters are properly connected to the network, ensure that the adapter IP addresses are consistent with your network. Perform the following steps:

- Click **Start>Run** to open the Run dialog box.

- Type **cmd** in the Run dialog box to start the command prompt.
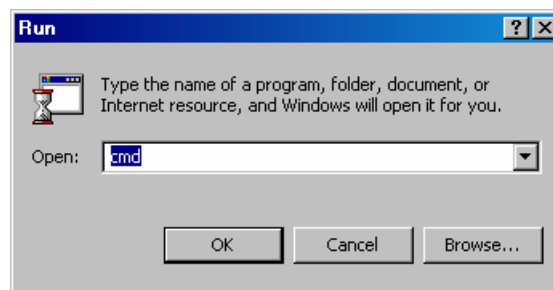
At the prompt, type **ipconfig**. This command displays all the IP addresses, subnet masks, and default gateways of the server.

```
C:\WINDOWS\system32\cmd.exe                                    _ □ ×

C:\>ipconfig

Windows IP Configuration


Ethernet adapter Local Area Connection 2:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 100.35.2.101
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :

Ethernet adapter Local Area Connection 4:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 100.32.1.101
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :

Ethernet adapter Local Area Connection 3:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 100.1.2.101
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . :

C:\>_
```

- The ping command is used to check network connectivity. Using one of the IP Addresses from the output of the ipconfig command in the previous step, type **ping [ip address].** If the adapter is connected to the network correctly, output similar to the preceding screen will be returned.

- Once the server has been pinged and indicates no problems, ping another host on the same network. If the server is within the same IP group and subnet mask as the target host and valid replies similar to the output below are not received, check the network parameters to ensure the server's IP address and subnet mask are correct.

Installation with Linux

The method for installing Linux drivers for this card will vary based on the Linux distribution that you are using. In most cases, Linux will automatically detect the installed PCI devices and load the appropriate driver. We recommend you refer to the documentation for your particular Linux distribution for instructions on installing the driver.

Information on Linux distributions supplied from HP may be found at the following website: http://www.hp.com/go/linux.